

1086-00-2995

Dorin Comaniciu*, Imaging and Computer Vision, Siemens Corporate Technology, Princeton, NJ. *Towards Personalized Medicine* Preliminary report.

The promise of personalized medicine is to do more in advance, promote early detection of the disease, more efficient workflows, and provide patient-specific therapies. This talk will analyze three emerging dimensions of imaging for personalized medicine: knowledge-based imaging, real-time, and in-silico modeling of the body function and disease. We will underline the role that mathematical sciences play in parsing the medical image data into hundreds of quantifiable components. We will showcase comprehensive cardiac models that include patient's anatomy, dynamics, hemodynamics and biomechanics. By presenting example applications that make today a difference in hospitals we will extrapolate on the imaging technology potential, expectations for the near future, and the increased demand for applied mathematics. (Received October 01, 2012)